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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/811,745	03/29/2004	Marty L. Stromquist	2003-IP-012798U1	1690

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EXAMINER

COLLINS, GIOVANNA M

ART UNIT	PAPER NUMBER
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3672

DATE MAILED: 12/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/811,745

Applicant(s)

STROMQUIST, MARTY L.

Examiner

Giovanna M. Collins

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 October 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Drawings

The request for drawings is vacated.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Puri et al. 4,883,122 in view of Wilson et al. 5,402,847.

Puri discloses a method of stimulating a water sensitive coal bed seam comprising contacting the coal bed seam with nitrogen gas (see col. 1, lines 63-66) and producing methane gas. Puri states the nitrogen can be heated (col. 2, lines 64-66) but does not disclose the nitrogen is hot gas which heats the coal seam such the coal bed seam shrink and forms methane gas flow passages. Wilson teaches the use injection gases, at 350 F, in coal bed seams shrinks the coal bed and increases cleats and interstices for methane gas to flow through (col. 3, lines 6-16). As it would be advantages to increase the flow passages to increase methane production, it would be obvious to one of ordinary skill in the art at the time of the invention to modify the method disclosed by Puri to have hot nitrogen gas to heat the coal bed seam and shrink the coal in view of the teachings of Wilson.

Referring to claim 2, Puri discloses the coal bed seam is under saturated with low pressure methane gas (col. 1, lines 60-62).

Referring to claim 3, Puri discloses using heated nitrogen (col. 2, lines 64-66) and Wilson teaches an injection gas having a temperature at about 350F col. 3, lines 6-16) to shrink a coal bed.

Referring to claim 4, Puri, as modified by Wilson, discloses the nitrogen is pumped at a low rate and pressure (col. 2, line 67-col. 3, line 3).

Referring to claim 5, Puri, as modified by Wilson, disclose the nitrogen is pumped from the surface (col. 3, lines 30-37).

2. Claims 6,7, and 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Puri et al. 4,883,122 in view of Wilson et al. 5,402,847 as applied to claim 1 and further in view of Jamaluddin 5,539,853.

Referring to claims 6-7, Puri, as modified, disclose the nitrogen is heated but does not disclose an electric heater in the wellbore. Jamaluddin et al. teaches that electrical heaters disposed with in a wellbore are well known in the art (see col. 1, line 43-col. 2, lines 65). As one of ordinary skill in the art would be familiar with located an heater downhole and it would be advantageous to heat the nitrogen as close to the coal bed to avoid loss of heat, it would be obvious to one of ordinary skill in the art at the time of the invention to modify the method disclosed by Puri, as modified by Wilson to locate the heater in the wellbore in view of the teachings of Jamaluddin.

Referring to claim 9, Puri, as modified does not disclose the heater is near the coal bed. However, in order to prevent the nitrogen gas from losing heat before entering the coal bed, it would be advantageous to have the heater located as near the coal bed as possible. Therefore, it would be obvious to one of ordinary skill in the art at the time of the invention to modify the method disclosed by Puri, as modified by Wilson and Jamaluddin to locate the heater near the coal bed seam.

Referring to claims 10, Puri, as modified, does not disclose coiled tubing. Jamaluddin teaches (fig. 5) using coiled tubing (at 504) to pump a treatment fluid into a well. Coiled tubing is a well known method of injecting fluids into a well. As one of ordinary skill in the art would be familiar with the use of coiled tubing, it would be obvious to one of ordinary skill in the art at the time of the invention to modify the method disclosed by Puri, as modified by Wilson, to use coiled tubing in view of the teachings of Jamaluddin.

Referring to claims 11, Jamaluddin teaches the heater is connected to coiled tubing (col. 4, line 34).

3. Claims 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Puri et al. 4,883,122 in view of Wilson et al. 5,402,847 as applied to claim 1 and further in view of Bross 5,769,165.

Puri, as modified, does not disclose a casing with perforations. Bross discloses a casing (at 16) with perforations (at 22). The casing helps to support the well and the perforations help to facilitate the flow of the injection material into the coal bed. As it

would be advantageous to have a casing to support the wall of the well and perforation to facilitate the flow of nitrogen into the coal bed, it would be obvious to one of ordinary skill in the art at the time of the invention to modify the method disclosed by Puri, as modified by Wilson, to have a casing with perforations in view of the teachings of Bross.

4. Claims 12 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Puri '122 in view of Wilson, '847 and Jamaluddin et al. 5,539,853 as applied to claims 10 and 19 and further in view of Schultz et al. 4,962,815.

Puri, as modified, does not disclose packers. Schultz teaches (fig 2) packers above and below a treatment area to isolate the treatment area. Therefore allowing more treatment fluid to flow into the treatment area. As it would be advantageous to inject as most of the nitrogen into the coal bed seam, it would be obvious to one of ordinary skill in the art at the time of the invention to further modify the method disclosed by Puri, as modified by Wilson and Jamaluddin to have packer above and below the coal bed seam in view of the teachings of Schultz.

5. Claims 13,14, and 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Puri '122 in view of Wilson, '847 and Jamaluddin et al. 5,539,853.

Referring to claims 13 and 14, Puri disclose providing a source of nitrogen on the surface and pump the gas at a relative low rate in to wellbore into the coal bed seam and heating the nitrogen and producing methane gas (col. 1, lines 63-66 and col. 2, lines 64-66). Puri does not disclose a heater or the nitrogen heats the coal bed and

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causes it to shrink and form flow passages. Jamaluddin et al. teaches that electrical heaters disposed within a wellbore are well known in the art (see col. 1, line 43-col. 2, lines 65). Wilson teaches the use injection gases, at 350 F, in coal bed seams shrinks the coal bed and increases cleats and interstices for methane gas to flow through (col. 3, lines 6-16). As it would be advantageous to increase the flow passages to increase methane production and electric heaters are well known in the art it would be advantageous to heat the nitrogen as close to the coal bed to avoid loss of heat, it would be obvious to one of ordinary skill in the art at the time of the invention to modify the method disclosed by Puri to have a heater in view of the teachings of Jamaluddin and to have hot nitrogen gas to heat the coal bed seam and shrink the coal in view of the teachings of Wilson.

Referring to claim 16, Puri, as modified does not disclose the heater is near the coal bed. However, in order to prevent the nitrogen gas from losing heat before entering the coal bed, it would be advantageous to have the heater located as near the coal bed as possible. Therefore, it would be obvious to one of ordinary skill in the art at the time of the invention to modify the method disclosed by Puri, as modified by Wilson and Jamaluddin to locate the heater near the coal bed seam.

Referring to claims 17, Puri, as modified, does not disclose coiled tubing. Jamaluddin teaches (fig. 5) using coiled tubing (at 504) to pump a treatment fluid into a well. Coiled tubing is a well known method of injecting fluids into a well. As one of ordinary skill in the art would be familiar with the use of coiled tubing, it would be

obvious to one of ordinary skill in the art at the time of the invention to further modify the method disclosed by Puri to use coiled tubing in view of the teachings of Jamaluddin.

Referring to claims 18, Jamaluddin teaches the heater is connected to coiled tubing (col. 4, line 34).

6. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Puri et al. 4,883,122 in view of Jamaluddin '853 and Wilson et al. 5,402,847 as applied to claim 13 and further in view of Bross '5,769,165.

Puri, as modified, does not disclose a casing with perforations. Bross discloses a casing (at 16) with perforations (at 22). The casing helps to support the well and the perforations help to facilitate the flow of the injection material into the coal bed. As it would be advantageous to have a casing to support the wall of the well and perforation to facilitate the flow of nitrogen into the coal bed, it would be obvious to one of ordinary skill in the art at the time of the invention to modify the method disclosed by Puri, as modified by Wilson and Jamaluddin, to have a casing with perforations in view of the teachings of Bross.

7. Claims 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Puri '122 in view of Wilson, '847 and Jamaluddin et al. 5,539,853 as applied to claim 13 and further in view of Dahl et al. 3,814,480.

Puri, as modified, does not disclose a plurality of coal bed seams. Dahl teaches typical coal formation can include a plurality of coal bed seams (col. 2, lines 60-65). As

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one of ordinary skill in the art would be familiar with a formation having a plurality of coal seams, it would be obvious to one of ordinary skill in the art at the time of the invention to modify the method disclosed by Puri, as modified by Wilson and Jamaluddin, to have a plurality of coal seams in view of the teachings of Dahl.

Response to Arguments

Applicant's arguments with respect to claims 1-20 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Giovanna M. Collins whose telephone number is 571-272-7027. The examiner can normally be reached on 6:30-3 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David J. Bagnell can be reached on 571-272-6999. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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